

REHAK, Svatopluk; VRANA, Milan

The nature of reactive hypertension during the course of forced increase in the eye volume. Cesk. ofth. 17 no.4/5:364-368 JI '61.

1. Oční klinika KU v Hradci Kralove, prednosta prof. MUDr. M. Klima  
Patofyziologicke oddeleni USOL, Praha, reditel Dr. Sc. J. Malek.

(INTRAOCULAR PRESSURE physiol)

REHAK, Svatopluk; VRANA, Milan

Determination of the outflow capacity of the eye during the course of reactive hypertension. Cesk. ofth. 17 no.4/5:369-374 J1 '61.

1. Očni klinika v Hradci Kralove, prednosta prof. dr. M. Klima, a patofyziologicke odd. USOL Praha, reditel Dr. Sc. J. Malek.

(INTRACULAR PRESSURE physiol)

ACC NR: AP6026687

SOURCE CODE: UR/0181/66/008/008/2374/2381

AUTHOR: Kurova, I. A.; Vrana, M.; Vavilov, V. S.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Observation of the motion of electrical domains in *n*-type germanium with a partially compensated upper acceptor level of gold

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2374-2381

TOPIC TAGS: electron capture, electron donor, temperature dependence, electric field

ABSTRACT: The motion and velocity of a strong electrical field (domain) was observed in samples of germanium containing Au and Sb in the range of temperatures between 15 and 35°K. The electrical instability is due to the dependence of electron capture in the upper acceptor level of the gold ( $E_c = 0.04$  ev) on the magnitude of the electric field. When the temperature and background increase, the domain accelerates. In the region of thermal generation of electrons in the sample, velocity depends exponentially on temperature and the activation energy is  $\sim 0.04$  ev. In the region in which electrons are generated primarily by the thermal background from the gold acceptor level, the temperature dependence of the velocity is exponential for all values of the background, and the activation energy is  $\sim 0.016$  ev, which is close to the temperature de-

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pendence of the coefficient of electron capture on doubly negative charged gold atoms at these temperatures. At lower temperatures, domain motion depends but slightly on temperature, and agrees with the theoretical equation of B. K. Ridley (*Phys. Let.*, 16, 105, 1965). The voltampere characteristic is linear and there is no instability below 15°K because conductivity in the samples is governed primarily by the ionization of carriers from the shallow donor level, which is filled by electrons as a result of optical recharging. It is shown that inhomogeneities in the sample strongly affect the nature of domain motion. The domain forms in the region of the largest stationary field in the sample and travels toward the field, disappearing at the anode or in the region of the weak field ahead of the anode. The authors thank V. L. Bonch-Bruyevich for discussions and V. V. Ostroborodova and N. I. Danilova for preparing the crystal samples. Orig. art. has: 10 figures.

SUB CODE: 20/

SUBM DATE: 10Jan66/

ORIG REF: 006/

OTH REF: 008

Card 2/2

BURIAN, V.; VYSOKA-BURIANOVA, B.; VRANA, M.; KYSELOVA, M.

A new combined vaccine against Bordetella parapertussis, diphtheria, tetanus and pertussis. Cesk. epidem. 14 no.6:339-345 N '65.

1. Ustav ser a ockovacich latek, klin. epid. odbor, Praha, Lekarska fakulta hygienicka Karlovy University, katedra epidemiologie, Praha a Ustav epidemiologie a mikrobiologie, Praha.

VRANA, Milan, promovany geolog; VREA, Jaroslav, promovany geolog

Influence of atmospheric precipitations on the results of  
pumping tests. Geol pruzkum 6 no. 3:85-86 Mr '64.

1. Vodni zdroje, Prague.

PEKAREK, J.; VRANA, M.

Effect of pertussis vaccination on anaphylactic shock in mice and rats. J. hyg. epidem. 7 no.1:28-36 '63.

1. Institute of Sera and Vaccines, Prague.  
(PERTUSSIS VACCINE) (ANAPHYLAXIS) (HISTAMINE)

VRANA, Otakar

Geography of hop cultivation in the North-Bohemia region. Sbor zen  
68 no.1:36-40 '63.



VRANA, O.

"Geographical research on the character of settlements on the Great Schutt Island"

p. 197 (Geographical Institute, Slovak Academy of Sceinces) Vol. 9, no. 4, 1957

SO: Monthly Index of East European Accession (EEAI) LC, Vol. 7, no. 5, May 1958

VRANA, O.

Frantisek Vitasek's Fyzicky zemepis, dil III. Roztinative a zivocisstvo  
(Physical Geography, Pt. 3, Plants and Animals); a book review.  
p. 157. Ceskoslovenske spolecnost zemepisne, SROUZEK, Praha.  
Vol. 66, no. 2, 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress  
Vol. 5, no. 12, December 1956.

VRANA, OTAKAR.

Vrana, Otakar Zaklady sdelniho zemepisu. (Vyd. 1.) Praha, Priradovedecke nakladatelstvi,  
1950. 60 p. (Basic principles of the geography of population)

SO: Monthly List of East European Accessions, L C, Vol.3 No. 1 Jan '54 Uncl.

VRANA, Stanislav

"Evolution of metamorphic belts" by A. Miyashiro. Reviewed by  
Stanislav Vrana. Vestnik ust geolog 37 no.6:487-488 N '62.

VRANA, Vladimir

Patent exclusiveness of industrial articles. Ratsionalizatsiia  
13 no.7:1-3 '63.

VRANA, V

"Capitalist patent law and the socialist law on invention"

p. 1 (Ratsionalizatsila) Vol. 7, no. 5, May 1957  
Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) IC, Vol. 7, no. 4,  
April 1958

VRANA, V.

Polish-Bulgarian cooperation in the field of invention and rationalization. p. 4. RATSIONALIZATSIIA. (Institut za ratsionalizatsiia) Sofiya Vol. 6, No. 1, Jan. 1956

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5, No. 11, November 1956

VRANA, V.

Engineer Kovlaov's Method Applied in the Activity of Rationalizers.  
Leka Promishlenost (Light Industry), #11:40: Nov 54



VRANA, VI.

A national competition for the rationalization of the economy  
of the electric and thermal power. Tekh delo no.437:2 4 Ag  
'62.

VRANA, Vl.

Copyright in the field of inventions and rationalization, and its protection. Ratsionalizatsiia no.10:1-4 '62.

VRANA, VI.

Rationalizer radio competition for metal saving concluded.  
Ratsionalizatsiia 13 no.6:37 '63.

VRAMA, V1.

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and documentation, held in Sofia. Ratsionalizatsiia no.12:  
34 '62.

VRANA, VI.

For the development of the rationalization movement in farming.  
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Towards a new rise in the field of inventiveness and rationalization.  
Ratsionalizatsiia 11 no.12:1-4 '61.

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I. Institut za izobretenia i ratsionalizatsii.

VRANA, Vladimir

Decisions on rationalization proposals, and procedure for submitting objections to them by virtue of paragraph 65 of the Regulation. Ratsionalizatsia 14 no.6:17-18 '64

1. Institute of Innovations and Rationalization.



23275

Z/039/60/021/012/002/002

E192/E382

9.1914 (1127)

AUTHORS: Černohorský, Dušan and Vrána, Vratislav, Engineers

TITLE: A Shortwave Vertical Antenna Operating with a Progressive and a Standing Current Wave

PERIODICAL: Slaboproudý obzor, 1960, Vol. 21, No. 12, pp. 730 - 734

TEXT: A wideband vertical antenna operating at short waves is analysed. The top load of the antenna (Fig. 1) consists of a resistance  $R$  and a terminating capacitance  $C$ . The current flowing through the capacitance  $C$  closes to the receiver through the earth surface and produces some radiation. The power lost in the earth surface and the power radiated can be taken into account by means of two equivalent resistances  $R_{e1}$  and  $R_{e2}$ , which are connected in series with  $C$ . In general, the second component can be neglected, i.e.  $R_{e2} = 0$ .  
The load of the antenna is therefore given by :

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$$Z = R + R_{el} - j \frac{1}{\omega C} \quad (1) .$$

If  $C \rightarrow \infty$ , it can be assumed that the antenna is terminated with an ohmic resistance and the condition of the appearance of a progressive wave is therefore given by:

$$R + R_{el} = Z_0 \quad (2)$$

where  $Z_0$  is the characteristic impedance of the antenna; this is approximately expressed by:

$$Z_0 = 138 \left( \log \frac{2l}{d} - k \right) \quad (3)$$

where  $l$  is the length of the antenna,  
 $d$  is the diameter of the antenna conductor and  
Card2/7<sup>k</sup> is a constant depending on the ratio of the antenna

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length to its height above the Earth  $l_1$ .

However, in general, it is not possible to meet the condition expressed by Eq. (2). It is therefore not possible to get a perfect progressive wave and a standing wave is also produced. In general, the terminating capacitance is of the order of tens of pF so that its reactance in the band of short waves is of the order of hundreds of ohms. The antenna cannot easily be matched and the standing-wave ratio is quite high. However, this situation can be overcome at least at one frequency by connecting a series inductance  $L$  to the terminal of the antenna. Now, at the resonant frequency of  $LC$  the top terminal of the antenna is effectively grounded and the standing wave is negligible. From the above, it is seen that, in general, a combination of progressive and standing wave is produced in the antenna so that its current can be expressed by:

$$i_z = I_0 \{ (1 + p) \cdot e^{j\alpha(l-z)} - j2p \cdot \sin[\alpha(l-z)] \} \quad (5)$$

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# A Shortwave Vertical Antenna ....

where  $\alpha = 2\pi/\lambda$ ,

$z$  is a variable coordinate measured from the lower terminal of the antenna,

$p$  is the current reflection coefficient for the top terminal of the antenna,

$I_o = I_o' \exp(-j\alpha z)$  is the amplitude of the wave at the end of the antenna and

$I_o'$  is the amplitude of the current at the input of the antenna.

On the basis of the above, it can be shown that the field produced by the standing current wave is given by:

$$E_s = \frac{j 60 I_{os} e^{-j\alpha r} [\cos(\alpha \ell \cos \theta) - \cos \alpha \ell]}{r \sin \theta} \quad (8)$$

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where  $I_{os}$  is the amplitude of the current wave which is expressed by:

$$I_{os} = -I_o \cdot j 2p \quad (9) .$$

On the other hand, the field due to the progressive wave is given by:

$$E_p = \frac{-j 60 I_{op} e^{-jar}}{r \cdot \sin \vartheta} \left\{ \cos \vartheta \cdot \sin(\alpha l \cos \vartheta) + \right. \\ \left. + j [e^{jal} - \cos(\alpha l \cos \vartheta)] \right\} \quad (10) \quad \checkmark$$

where  $I_{op}$  is expressed by:

$$I_{op} = I_o (1 + p) \quad (11) .$$

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The total field is given by the sum of the components expressed by Eqs. (8) and (10). On the basis of the above formulae, it was possible to determine the radiation diagrams and input impedances for the antenna with and R, L, C load. From these diagrams it is found that the radiation patterns of the antenna do not differ substantially from those of a similar antenna with a simple standing wave; the only substantial difference is observed in the shape of the side lobes. On the other hand, the presence of a progressive wave in the antenna current results in a "smoothing" effect of the input resistance of the antenna. It is found, in particular, that with a suitable L and  $R = R_0$  (where  $R_0$  is the characteristic resistance of the antenna) the impedance characteristic at frequencies between 4 and 14 Mc/s is comparatively uniform.

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A Shortwave Vertical Antenna ....

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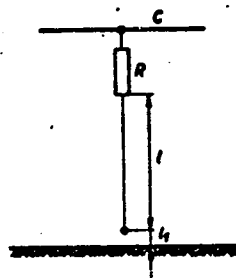
Z/039/60/021/012/002/002

E192/E382

There are 8 figures and 4 references: 1 Czech and 3 non-Czech.

SUBMITTED: May 5, 1960

Fig. 1:



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CERNOHORSKY, Dusan, inz.; VRANA, Vratislav, inz.

Simplifying the calculations of antenna radiation patterns.  
Slaboproudy obzor 21 no.8:454-459 Ag '60. (EEAI 10:1)  
(Radio)



VRANA, V.

"Our cooperation with the German Democratic Republic in the field of invention, samples, and trade-marks."

p.3, (Ratsionalizatsiia, Vol. 7, no. 2, Feb. 1957, Sofia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

VRANA, V.

Significance of patents for our socialist economy.

p. 1 (RATSIONALIZATSIIA) Vol. 7, no. 10, Oct. 1957,  
Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,  
March 1958

VRANA, V.

VRANA, V. Protection of patent rights for suggestions in rationalization, technical improvements, and inventions according to the amendments in the Criminal Code. p.6.

Vol. 6, no. 3, Mar. 1956 RATSIONALIZATSIYA Sofiya, Bulgaria

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 10  
Oct. 1956

VRANA, V.

New law on rationalization and inventions in the Hungarian People's

Republic. p. 6

RATSIONALIZATSIIA. Vol. 6, No. 4, Apr. 1956

Sofiya, Bulgaria

So. East European Accessions List Vol, 5, No. 9 September, 1956

VRANA, V.

VRANA, V. The official duties of the engineers and technical workers and their rationalization suggestions. p. 5.

Vol. 6, No. 6, June 1956.

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TECHNOLOGY

Sofia, Bulgaria

So: East European Accession, Vol. 6, No. 2, Feb. 1957

VRANA, V.

VRANA, V. Results from the competition on small dams, for working out a new, more exact type of designs and estimates. p. 11. Vol. 6, no. 7, July 1956.  
RATSIONALIZATSIA, Sofia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol 6, No. 4--April 1957

VRANA, V.

VRANA, V. Role and tasks of the Institute for Rationalization in the field of  
invention and rationalization. p. 1.

Vol. 6, No. 10, Oct. 1956.

RATSIONALIZATSIIA.

TEKHNILOGIYA

Sofia, Bulgaria

So: East European Accession, Vol. 6, No. 3, March 1957

VRANA, V.

"Experimenting With Rationalizers' Suggestions", P. 3, (RATSIONALIZATSIIA,  
Vol. 3, No. 10/11, Oct./Nov. 1953, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12,  
Dec. 1954, Uncl.



VRANA, VI.

Inventors and rationalizers, fighters for technological progress.  
Ratsionalizatsiia 11 no.8:5-6 '61.

(Inventions) (Industrial management)

VRANA, VI.

A new industrial method for the preparation of sodium sulfide. Ratsionalizatsiia no.6:21 '62.

VRANA, VI.

Conference on the rationalization activities in the dressing,  
mining, and metallurgic enterprises. Ratsionalizatsiia no.6:38-39  
'62.

VRANA, Vl.

Let us improve our work in the rationalization competition.  
Ratsionalizatsiia no.6:7-9 '62.

VRANA, Vl.

The Bulgarian rationalizer competition for the economy of electric and heat energy. Elektroenergiia 13 no.7:27-28 J1 '62.

VRANA, Vl.

The rationalization activities in the Plant 10. Ratsionalizatsiia  
no.7:37-38 '62.

VRANA, Vl.

Organizational and technical innovations, and rights of their  
authors. Ratsionalizatsiia no.8:7-9 '62.

VRANA, Vl.

Personal material interest in the invention and rationalization activities. Ratsionalizatsiia no.2:5-7 '62.



VRANA, Vladimir

First results of the competition for the economy of metals.  
Tekh delo 13 no.429:2 2 Je '62.

VRANA, Vl.

Rationalizer Youth Competition conclude successfully. Ratsionalizatsiia  
11 no.9:38-39 '61.

(Industrial management)

VRANA, VI.

Let us make use of the Soviet experiment for the improvement  
and extending of the work of public construction bureaus.  
Ratsionalizatsiia 13 no.1:16-18 '63.

Z/039/60/021/08/002/032  
E140/E563

AUTHORS: Černohorský, Dušan, Engineer, Vrána, Vratislav, Engineer

TITLE: Simplified Calculation of Antenna Patterns<sup>15</sup>

PERIODICAL: Slaboproudý obzor, 1960, Vol 21, No 8, pp 454-459

ABSTRACT: A graphical-numerical method is given for the calculation of antenna radiation patterns. The current distribution on the antenna is substituted by a piecewise-constant distribution. It is assumed that the Earth has infinite conductance. The following cases are considered: radiation of a perpendicular conductor over the surface of the Earth; radiation of a horizontal conductor over the surface of the Earth; radiation of a capacitance-loaded antenna. <sup>16</sup>

There are 9 figures, 3 tables and 7 references, 2 of which are Czech, 1 Soviet, 1 German and 3 English.

SUBMITTED: March 26, 1960

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BICHEVOY, Ya.V.; VRANA, V.F.; KARTASHEVA, N.M., red.; TRUKHINA, O.N.,  
tekhn. red.

[Succulent forage the year round] Sochnye korma - kruglyi god.  
Moskva, Sel'khozizdat, 1962. 109 p. (MIRA 16:3)

1. Sekretar' rayonnogo komiteta Kommunisticheskoy partii  
Sovetskogo Soyuzo Novo-Aleksandrovskogo rayona Stavropol'-  
skogo kraya (for Bichevoy). 2. Glavnyy zootekhnik kolkhoza  
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(for Vrana).

(Feeds)

VRANA, Zdenek, inz.

Examination of the thickness of cover in open mines.  
Uhli 4 no.5:164-168 My '62.

1. Dul Sverma, Holesovice u Mostu.

VRANA, Z.

"Present methods of evaluating efficiency and utilization of mining machinery in open-pit lignite mines." p. 78.

UHLI. (Ministerstvo paliv). Praha, Czechoslovakia, Vol. 1, No. 3, Mar. 1959.

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Uncla.

VEHA, Z.

A contribution to the problem of cumulative blasts in open pits. n. h  
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SC: Monthly List of East European Accessions (FEAL) IC. Vol 4, no. 12, Dec. 1957. Uncl.



VRANA, Z.

Determining the depth limit in strip mining from the geologic point of view. p. 35.

UHLI. (Ministerstvo paliv)  
Praha, Czechoslovakia  
Vol. 1, no. 2, Feb. 1959.

Monthly list of East European Acessions (EEAI), LC, Vol. 8, no. 7  
July 1959  
Uncl.

VRANA, Z.

TECHNOLOGY

Periodicals: ELEKTROTECHNIK Vol. 14, no. 3, Mar. 1959

VRANA, Z. We are building a machine factory in Korea. p. 86.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5,  
May 1959, Unclass.

VRANA-HEJNALOVA, D.

Effect of vegetative water in potatoes on butanol-acetone fermentation. p. 32.  
(Kvasny Prumysl, Vol. 3, No. 2, Feb 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions(EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

VRANAK, M.

Duty of the tourist press; Press Day. p. 321

KRASY SLOVENSKA no. 9, Sept, 1955

CZECHOSLOVAKIA

SOURCE: EAST EUROPEAN ACCESSIONS LISTS VOL. 5, no. 7, July 1956

GROCH, J.; technicka spolupraca SABADOSOVA, S.; VRANAYOVA, E.

Hygienic problems of the organization of the daily regimen in school day-hostels. Cesk. hyg. 7 no.9:522-527 0 '62.

1. Ustav hygieny a epidemiologie Lekarskej fakulty UPJS, Kosice.  
(SCHOOL HEALTH)

GROCH, Jura; za technickej spoluprace VRANAYOVEJ, E.; SARAYOVEJ, S.

Estimation of the time schedule for young school children. Cesk. pediat.  
17 no.4:368-372 Ap '62.

1. Ustav hygieny a epidemiologie Lek. fak. University P. J. Safarika  
v Kosiciach, prednosta MUDr. R. Pospisil, CSc.

(CENTRAL NERVOUS SYSTEM physiol)  
(SCHOOL HEALTH)

VRANCEA, A.

I. CLAUDIAN, Bull Soc Med Bucarest, 1938, 20, 147-153

VRANCEA, S.; POPET, Aurelia; GHISOIU, Carmen

Methodological aspects of the biological standardization of  
corticotropin. Stud. cercet. endocr. 15 no.2:133-140 '64.



VRANCEANU, G., acad. prof.

Alexandru Orascu (1817-1894). Studii cerc mat 15 no. 3:429-430  
'64.

Sem. Vektor. Tenzor. Analizu.] 1, 12-101 (1933)], P. Rachevsky [ibid., 126-142 (1933)], and H. Schapiro [ibid., 102-125 (1933)]. First, certain of their results are reformulated by a new approach emphasizing either the existence of a set of invariant equations or of invariant first integrals of the differential equations of the paths defining the space. In the subprojective case (the chief interest of Kagan and his school) use is made of the device of projecting the pole to infinity instead of placing it at the origin. Then, spaces  $n-m-1$  times projective with an  $(m-1)$  dimensional linear space as pole are treated to the extent of finding the form of the fundamental affine connection in the special coordinates with pole at infinity and in finding certain forms of Riemann metric which give rise to them. Finally the necessary and sufficient conditions for a poled  $n-m-1$  times projective space and for a general  $n-2$  times projective space are written, the former in invariantive form.

J. L. Vanderslice (College Park, Md.)

Vranceanu, G. Sur les espaces partiellement projectifs

Bull. Math. Soc. Roumaine Ser. 48, 43-64 (1947)

This is a further study of topics first broached in papers by B. Kagan [Abh. Sem. Vektor- und Tensoranalysis [Trudy

Source: Mathematical Reviews,

Vol. 11 No. 3

11. G. Lesons de Géométrie Différentielle  
Congruences. Formes de Pfaff. Groupes con-  
variants et équivalence. Espaces à connexion  
Espaces de Riemann. Espaces à connexion  
Bucarest, 1947. 422 pp.

A thoroughly modern and scholarly treatise on  
differentially presented with considerable originality  
and with the author's nonhomogeneous prelections  
primarily for the specialist. The style is rather  
discursive. Whenever possible, a naive atti-

tude toward the subject matter, in other words,  
is preferred to elegance, hammer and tongs  
clever devices. The reader benefits from this  
he methods of both Ricci and Cartan (tensors  
s) are used, with emphasis the connecting link  
congruences, Pfaffians. This includes the simpler  
if tensors, Pfaffians, bilinear covariants, and  
cal forms; systems of congruences (envelopes)  
decalus. Chapter II. Finite continuous groups  
te a complete and unbackneyed presentation  
e-Cartan viewpoint including even such topics  
ical forms of the structure tensor of any  $G_1$  and  
on of all primitive groups in two variables.

Invariants and equivalence. The Cartan ap-  
pugh Pfaffian systems is developed and applied  
cometric and analytic problems such as invari-  
quivalence of webs (textile geometry) and of  
ferential equations of first and second order.  
an aspect of Pfaffian theory which is not widely  
even less widely understood. Fortunately the  
es no details (Chapter IV. Affinely connected

Source: Mathematical Reviews, 1/7 Vol 9 No. 7

the notion of affinities. Besides the standard high treatment of topological relations. Also notable of the concept of group action. The methods of problem of equivalence stated discussion of the Then for good measure structure equations. Chapter of one chapter as familiar discipline with axioms and original ideas of Euclidean space in the context of spaces. In author takes the Cartan- most part Veblen for projective ensembles a transitive. The more special id of 1.3. Thomas are. Some of the developments to the present case. Application results. The proposed normally connected spaces, spaces and invariants of spaces (College Park, Md.).

Source: Mathematical Reviews, 3/2 Vol 9 No. 9  
511

Vilaveanu, G. Classification des groupes de Lie de rang  
2. *Publ. Inst. Math. Roum. Sér. Math.* 1, 1968, 1-10. (Russian and French summaries)

... a partial canonical form  
... Lie algebra. In  
... the reduced form  
... factors of the form  
... New York, N.Y.

VRANCEANU GEORGHE

\* Vrănceanu, Gheorghe. Lecturi de geometrie diferențială. Vol. II. Spațiile lui Călugăreanu. Conformitate. Tensori de al doilea ordin. Subspații. Spații neolionome. Ecuații cu derivate parțiale de al doilea ordin. Geometrie diferențială globală. Lectures on differential geometry. Vol. II. Riemann spaces. Conformal transformations. Tensors of second order. Subspaces. Non-linear spaces. Partial differential equations of the second order. Global differential geometry. 1968. 172 p.

2 - F/W

7/2







✓ \* Vrancoanu, Gheorghe. Lectii de geometrie diferentiaib. I - F/W  
 Forme ale lui Pfaff. Grupuri con-

Vranceanu, G. Sur la réduction à une forme canonique  
des équations des courbes auto-parallèles d'un espace  
 $A_1$ . Com. Acad. R. P. Române 2 (1952), 479-484.  
(Romanian. Russian and French summaries)

1 - F/W

The differential equation of the geodesics of a space  
 $A_2$  of symmetrical affine connection is

$$\frac{d^2y}{dx^2} = a\left(\frac{dy}{dx}\right)^2 + b\left(\frac{dy}{dx}\right) + c\frac{dy}{dx} + d,$$

where  $a, b, c, d$  are functions of  $x$  and  $y$ . A point transfor-  
mation can reduce two of these coefficients to zero. The  
cases  $a=d=0$  and  $a=c=0$  are singled out and an appli-  
cation is made to the geodesics of a Riemannian surface  
 $V_2$ .  
D. J. Struth (Cambridge, Mass.)

VRANCEANU, G.

"The Calculation of time and the dosage of rotary treatment in X-ray therapy. p. 19"  
BULETIN STIINTIFIC, Vol. 4, no. 1, Jan./Mar. 1952, Bucuresti, Rumania.

SO: Monthly List of East European Accessions, L.C. Vol. 2, No. 11, Nov. 1953, Uncl/

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Mathematical Reviews  
Vol. 14 No. 11  
December, 1953  
Geometry.

Vranceanu, G. On spaces with non-Euclidean affine connection with a maximal group of transformations into itself. : Acad. Repub. Pop. Române. Bul. Ști. A. 1, 813-821 (1949). (Romanian. Russian and French summaries)

An affinely connected space which is not euclidean permits at most an  $n^2$ -parameter group of automorphisms. The author exhibits the form to which the connection of spaces with maximal group can be reduced as well as the form of the automorphic group itself.

*J. L. Vanderstic.*

VRANCEANU, G.

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 Vrănceanu, G. Sur une équation arithmétique. Com. Acad. R. P. Române 3 (1953), 5-8. (Romanian. Russian and French summaries)  
 Let  $N^2$  have (in decimal notation) as last digits precisely the  $n$  digits of  $N$ . Then  $N$  satisfies the diophantine equation (\*)  $N^2 - N = A \cdot 10^n$  with some integral  $A$ . For every integer  $n$ , Pompeiu [Acad. Repub. Pop. Române. Bul. Şti. Sect. Şti. Mat. Fiz. 4 (1952), 1-5; MR 15, 602; see also Dickson, History of the theory of numbers, v.1, pp. 458-459] has shown that there are two solutions  $N$  and  $N'$ , satisfying  $N + N' = 10^n + 1$ . The author gives a proof of these statements, generalizes (\*) to (\*\*)  $N^2 - kN = A \cdot 10^n$  and obtains the result that (\*\*) with  $k = \pm 1, \pm 3$  contains only two lattice points  $(N, A)$  with positive coordinates less than  $10^{n+1}$ .  
 E. Grosswald.

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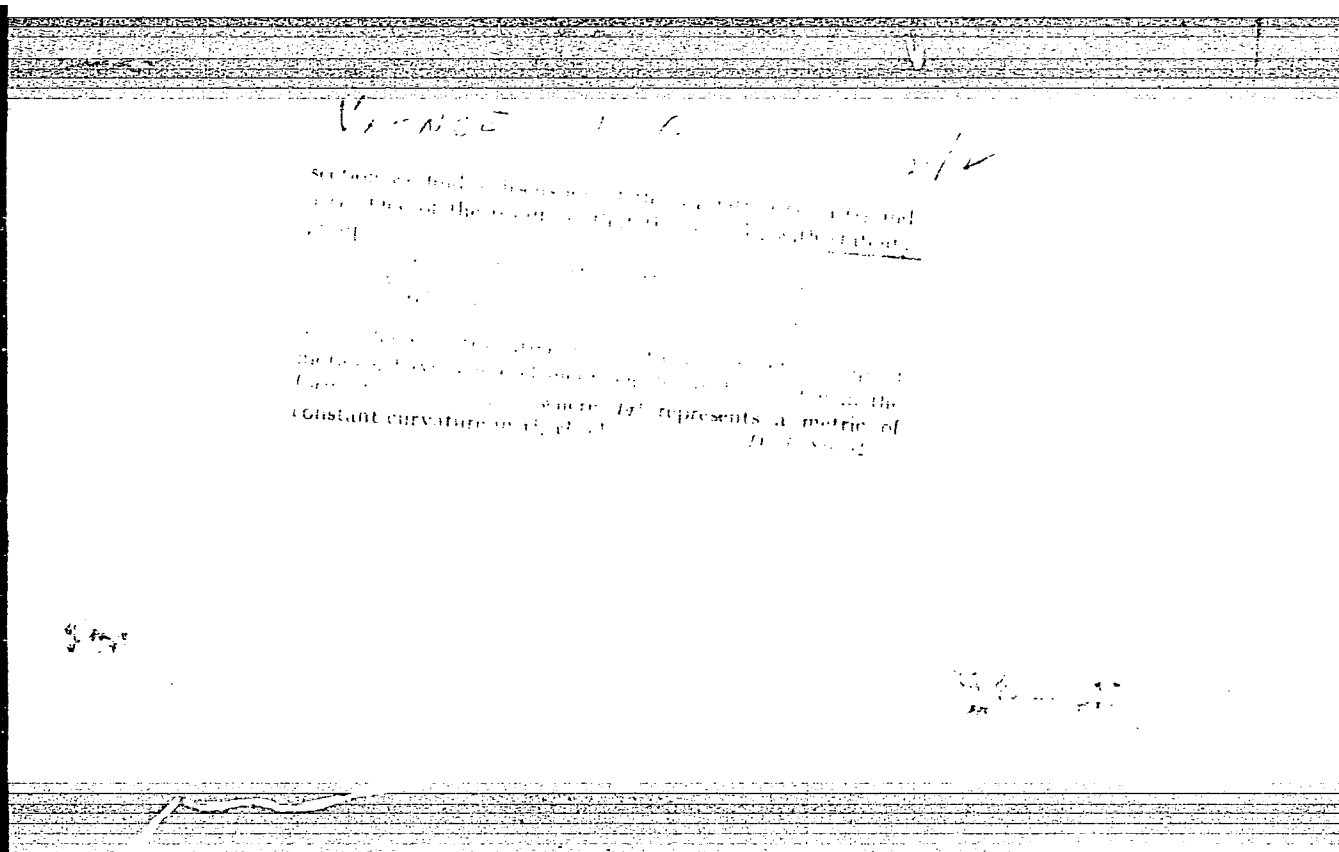
Vranceanu, G. Sur les espaces  $V_n$  ayant comme groupe de stabilité un  $V_n$ . (P. 94) Math. Scand. 3 (1953) 24-32 (1954)

The group of motions and the stability group of a  $V_n$  have at most  $2n+1$  and  $2n-1$  parameters respectively. Special results were obtained by Fubini, Egoroff and the author [cf. the reviewer's *Riv. di matematica*, second ed. (1954) p. 348]. It is proved here that the special symmetrical  $V_n$ 's are exactly those that have an eight parameter group of motions (see the end of  $V_n$ 's with this property).

J. A. Schouten (Eps)

**Vrănceanu, G.** Sur les groupes de mouvement d'un espace de Riemann à quatre dimensions. Acad. Român. Pop. Român. Stud. Cerc. Mat. 4, 121-133 (1953). (Romanian). Romanian and English summaries.

In the first section of this paper, the theorem from [1] with a topological stability property is generalized, establishing a generalization of the theorem from [2] (see, for example, [10, pp. 3-4, 1993]). In the second section, it is shown that the result of the topological stability of the continuous spaces of functions  $C(X, Y)$  is true for  $X = T$  (see, for example, [11, p. 214]). A note of N. G. SSSR, No. 66, 793-796, 1949, (see Rev. 11, 214). It is also shown that if we pass from a space  $C_1$  of functions of constant sign to a space  $C_2$  of functions of constant sign with given  $C_1$ , we do not lose the property of topological stability of the space  $C_2$  (see, for example, [12, p. 10]).





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On the isometric correspondence of two Riemannian spaces of  $n-1$  category. Studii cerc mat 16 no.10:1207-1209 '64.

VRANCEANU, G.

"Sur les espaces  $V_n$  a groupe simplement transitif." Revue de Mathematiques et de Physique, Vol. 2, 1954

Vranceanu, Gheorghe

Vranceanu, Gheorghe. Sur les espaces à connexion affine  
partiellement projectifs (Czechoslovak Math. J. 4(79): 1 - F/W

233-286 (1954) (Russian summary)

An affine  $A_n$  is said to be partially projective of order  $n-p$   
if its self-parallel curves given by

$$\frac{dx^i}{dt} = \Gamma_{jk}^i \frac{dx^j}{dt} \frac{dx^k}{dt}$$

can be expressed by  $n-p$  linear equations and  $p-1$  equations which need not be linear,  $p \geq 1$ . If  $p=1$  the  $A_n$  is projective euclidean. It is shown that, if the  $A_n$  has in every hyperplane the maximum number  $\infty^{n-1}$  of self-parallel curves, it is projective euclidean (and conversely). If it has

$$\frac{\partial \Gamma_{ab}^c}{\partial x^d} + \frac{\partial \Gamma_{ba}^c}{\partial x^d} + \frac{\partial \Gamma_{ca}^b}{\partial x^d} + \Gamma_{ab}^d \Gamma_{cd}^e + \Gamma_{ba}^d \Gamma_{cd}^e + \Gamma_{ca}^d \Gamma_{bd}^e = 0$$

D. J. Struik (Cambridge, Mass.)

Vranceanu, G.

Vranceanu, G. Propriétés différentielles globales des  
espaces  $A$  à groupe maximum  $G$ . Acad. Repub. Pop.  
Romîne. Bul. Şti. Ser. Şti. Mat. Fiz. 6, 49-59 (1954)  
(Romanian. Russian and French summaries)  
The spaces  $A$  with an invariant Pfaffian and a

1 - P/W

by coefficients

$$\Gamma_{11}^1 = \mu, \quad \Gamma_{11}^2 = \rho \delta_{11}, \quad \Gamma_{11}^k = 0, \quad \Gamma_{11}^n = (\lambda + \mu \rho) x^1, \quad \Gamma_{11}^n = 0$$

$$(k, k = 2, \dots, n; \mu, \rho, \lambda \text{ constants}).$$

This has been shown in the author's "Lectures on differential geometry," v. II, [Acad. Repub. Pop. Române, 1951, p. 66, AFR 14, 1949]. In the present paper we find expressions for the auto-parallel curves of these  $A_n$  for the case without torsion ( $\lambda = 0$ ); there are three cases depending on the character of the roots of the quadratic equation  $r^2 + r - \lambda = 0$ . It is also shown, by a suitable transformation, that  $A_n$  can be given constant connection coefficients. The structure of the  $G_n$  is analyzed, and it is demonstrated that there exist two asymmetrical spaces in the sense of Cartan, given by

$$\Gamma_{11}^1 = \Gamma_{11}^1 = \Gamma_{11}^2 = \Gamma_{11}^k = 0, \quad \Gamma_{11}^n = \pm x^1$$

$$(k, k = 2, \dots, n; i = 1, \dots, n).$$

D. J. Struik (Cambridge, Mass.).

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Struik



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Factorization of the sphere  $S_{2p+1}$  by large circles. p. 1425.  
Academia Republicii Populare Romine. COMUNICARILE. Bucuresti.  
Vol. 5, no. 10, Oct. 1955.

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5,  
no. 9, Sept. 1955

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VRANCEAFU, C. S. 1964. *La constante de couplage*  
 1964. R. 1964. *La constante de couplage*  
 1964. R. 1964. *La constante de couplage*

*Math*

where  $\alpha$  is the angle between the metric  
 tensor and the metric tensor. It follows that if  $\alpha$  has  
 constant value, then the formula

$$g_{ij} = \alpha_{ij} + \beta_{ij} \quad (1)$$

holds. In this case, the metric tensor is the  
 autodual metric tensor. The Riemannian spaces with

constant value of  $\alpha$  are called *Riemannian spaces with*  
*constant value of  $\alpha$* .

It is known that the Riemannian spaces with  
 constant value of  $\alpha$  are isometric to the

Riemannian spaces with constant value of  $\alpha$ .  
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From the author leaves a more direct proof of  
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VRANCEANU, G.

About intrinsic invariants of nonholonomic spaces. p. 9.  
(ANALELE. SERIA STIINTELOR NATURII. Rumania. Vol. 5, no. 11, 1956)

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001961210012-8

SO: Monthly List of East European Accessions (REAL) LC, Vol. 6, no. 7, July 1957. Unc.

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Vranceanu, Gheorghe. Sur le groupe de stabilité d'un espace à connexion affine. Bull. Math. Soc. Sci. Math. Phys. R. P. Roumaine (N.S.) 1(49) (1957), 121-124.

The stability group of an affine space  $A_n$  ( $\Gamma_{jk}^i = \Gamma_{ij}^k$ ) is the group of automorphisms which preserves a point. Expressed in normal coordinates, this group is linear homogeneous. If  $A_n$  is not euclidean this group cannot be the full group with  $n^2$  parameters; if the  $A_n$  is Riemannian, the group is orthogonal. If  $A_n$  is not euclidean, and has a transitive group, then the stability group cannot contain the special transformation  $\sum x^i \partial_i$ .

D. J. Struik (Cambridge, Mass.)

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Spaces with affine connection and locally Euclidean, and the entire Cremonian transformations. In French. p. 111.

REVUE DE MATHEMATIQUES PURES ET APPLIQUEES. JOURNAL OF PURE AND APPLIED MATHEMATICS. (Academia Republicii Populare Romine) Bucaresti. Rumania. Vol. 2, 1957.

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Linear transformations, produced by infinitesimal transformations. In Russian.  
p. 341.

REVUE DE MATHEMATIQUES PURES ET APPLIQUEES. JOURNAL OF PURE AND APPLIED  
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Vol. 3, no. 3, 1958.

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Uncl.

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Locally Euclidean spaces of affine connection of the third class.  
p. 29.

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Vol. 7, no. 17, 1958

Monthly list of European Accessions (EEAI) LC, Vol. 8, no. 8, Aug. 1959

Uncl.

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Punctual transformations in two variables, linear in one of the two. p. 19.

ANALELE SERIA STINTELOR NATURII. Bucuresti, Rumania Vol. 7, no. 18, 1958.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 9, Sept., 1959.

Uncl.

5498:

Vranceanu, Gheorghe, Espaces de Riemann partiellement projectifs à métrique indéfinie. Math. Nachr. 18 (1958), 123-126.

Etant donné un espace de Riemann  $V_n$  à métrique indéfinie partiellement projective d'ordre  $n-m-1$ , la métrique peut être écrite sous la forme

$$ds^2 = 2dx^i dx^{m+i} + 2 \frac{\partial f}{\partial x^i} dx^i dx^{2m+p} + a_{\alpha\beta} dx^\alpha dx^\beta$$

( $i \leq m$ ;  $\alpha, \beta > m$ ;  $p \leq n-2m$ ). Dans le cas d'ordre maximum ( $n=2m$ ) on a la forme canonique

$$ds^2 = 2dx^i dx^{m+i} + \varphi(x^i dx^{m+i})^2 + b_{\alpha\beta} dx^\alpha dx^\beta$$

où  $\varphi$  et  $b_{\alpha\beta}$  dépendent seulement des variables  $x^\alpha$ . Pour le cas où la métrique est définie positive voir le livre de l'auteur [Lectures on differential geometry, vol. II, Ed. Acad. R. P. Române, 1951; MR 16, 1049; Ch. I].

A. Svec (Prague)

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VRANCEANU, G.

16(1) PHASE I BOOK EXPLOITATION SOV/2660

Vsesoyuznyy matematicheskiy s'ezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye sozhraniye sektsionnykh dokladov. Doklady inostrannykh uchennykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskii institut.

Rech. Ed.: G.M. Shevchuk; Editorial Board: A.A. Abrasov, V.G. Kuznetsov, A.M. Krasovskiy, B.G. Zhukovskiy, S.M. Krasovskiy, (Rech. Ed.), A.G. Pogodaev, V.V. Ponomarev, K.A. Rybnikov, P.L. Ulyanov, V.A. Uspenskiy, M.O. Chetaev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is given in the index. The book is divided into two volumes, Reference is made to the appropriate volume. The book, both Soviet and non-Soviet, covers various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

Brzdęk, E. (Poland). On spaces of sets connected in  $n$ -dimensions 200

Gilinski, B. (Poland). Certain applications of the concept of an open mapping 200

Jamrowski, Ja. (Poland). Theorems on antipodes 200

Section on Geometry

Klaschka, B. (German Federal Republic). On topological differential geometry 201

Preussner, G. (Romania). Partially projective spaces (Egan spaces) 204

Severi, P. (Italy). The irregularity of algebraic varieties. Topological problems 208

Segre, B. (Italy). Local and general properties of the cor-

Card 32/34

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Punctual transformations with a constant projective connection. In French.  
p. 157.

REVUE DE MATHÉMATIQUES PURES ET APPLIQUÉES. JOURNAL OF PURE AND APPLIED  
MATHEMATICS. Bucuresti, Rumania. Vol. 4, no. 1, 1959.

Monthly List of East European Accessions. (EEAI), LC. Vol. 8, no. 9, <sup>Sept.</sup> 1959.  
Uncl.

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Tiberiu Mihailescu's Geometrie diferentiala proiectiva (Projective Differential Geometry); a book review. Rev math pures 4 no.3: 485-488 '59. (KEAI 10:9)

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(Mihailescu, Tiberiu) (Geometry, Differential)  
(Rumania---Bibliography)

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Determining the commutative discrete groups of the affine plane.  
Rev math pures 4 no.4:555-575 '59. (EAI 10:9)

1. Comite de redaction, "Revue de mathematiques pures et appliquees".

(Geometry) (Transformations(Mathematics))  
(Spaces, Generalized) (Abelian groups)